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Research Article

Relationship Between Early Complex Food Practice with Nutritional Status Among Children Age 7 to 23 Months

Megasari Megasari[1]* | Mariyani Mariyani[2]

[1]Faculty of Midwifery, STIKes Abdi Nusantara Jakarta, Indonesia

***contact**

smega4745@gmail.com

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Abstract

Aims: Knowing the factors associated with the practice of early complementary feeding with the nutritional status of infants aged 7 to 23 months in Sipayung Village, Cipanas District, Lebak Regency.
Method: A cross-sectional design was used for quantitative and analytical study. A purposive sampling method was used to choose 51 mothers with babies between the ages of 7 and 23 months as the study sample. A questionnaire was used as the study tool. The square test was used to look at the primary data.
Result: The single-variable study showed that 82.4% of infants had good nutrition and 72.5% of those who were given MP ASI did so correctly. The bivariate analysis showed that there was a link between the number of times MP-ASI was given, the age at which it was first given, how often it was given, how consistently it was given, and the infant's nutritional status (p value = 0.000).
Conclusion: The practice of giving MP-ASI has to do with how well babies ages 7 to 23 months are eating. Mothers of babies should always pay attention to how, how often, and how much they feed their babies as they get older. This includes the form, frequency, and amount of food. The mother of the baby can also regularly weigh her child at the posyandu.

Keywords:
Children, Food Practice, MP-ASI, Nutritional Status, Practice

INTRODUCTION

The first thousand years of human life begin when a baby is in the womb until the baby is two years old. This period is important so that it requires adequate nutritional fulfillment to support optimal growth, development and health of the baby. Babies aged 6 months are introduced and given additional nutrition in the form of complementary foods for breast milk (MP-ASI) or additional food that aims to fulfill the baby's nutrition (1). Provision of correct MP-ASI will greatly affect the child's growth and development process and intelligence. Provision of inappropriate MP-ASI will cause problems in the child's nutritional status, one of which is the problem of malnutrition and poor nutrition (2). The World Health Organization (WHO) said that malnutrition is one of the dangerous threats to the health of the world's population. Malnutrition is estimated to be the main cause of 3.1 million child deaths each year. According to the United Nations International Children's Emergency Fund (UNICEF) report, the number of toddlers suffering from malnutrition in the world reached 767.9 million children in 2021. This number increased by 6.4% compared to the previous year in 2020, which was 721.7 million children (3).

Out of 767.9 million children, 45.4 million under five globally experience acute

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malnutrition. The majority are in areas of humanitarian conflict, poverty, and limited nutritional health services. South Asia has the highest percentage of toddlers suffering from acute malnutrition, followed by West and Central Africa, Middle East and North Africa, East and South Africa, and Latin America and the Caribbean (4). Indonesia itself is recorded as the country with the highest number of malnourished people in the Southeast Asia region. The results of the Indonesian Nutritional Status Survey (SSGI) of the Ministry of Health show that the prevalence of undernourished toddlers is 17.1% in 2022 or an increase of 0.1 points from the previous year, which was 17% in 2020 (5). In 2021, Banten Province was in the top five regions with the highest stunting rates in Indonesia, namely 294,862 toddlers (24.50%). The highest districts include Pandeglang Regency, reaching 37.8%, followed by Lebak Regency, reaching 27.3% (6). Inappropriate and age-appropriate complementary foods can disrupt a baby's nutritional needs and cause digestive problems. Babies under 6 months old have a poorly functioning digestive system, leading to issues like diarrhea and bloody stools. Overconsumption of complementary foods can result in overweight and obesity, stunting growth and development (7).

Complementary foods for breast milk (MP-ASI) are given to babies aged 6 months to meet the nutritional needs other than breast milk. This is because breast milk is only able to meet two-thirds of the baby's needs at the age of 6-9 months, at the age of 9-12 months it meets half of the baby's needs, and at the age of 12-24 months it only meets one-third of the baby's needs (8) WHO states that several things that must be considered in providing complementary foods include the initial age of administration, consistency related to texture and type of food, amount of dosage and frequency of administration. The texture of the food must be adjusted to the condition and age of the baby so that it can be digested easily and malnutrition does not occur (9).

Complementary foods do not replace breast milk, but are gradually added according to the baby's nutritional needs. The success of providing MP-ASI is also influenced by the development of the baby's nervous system, digestive tract and kidney function. Feeding babies is a complex topic because it has an impact not only on the baby's health and nutritional status, but also on psychological development and to form proper eating habits. Proper eating habits can affect the child's health and nutritional status in the future (10).

Previous research results conducted by Research by Hasanah and Kopa found a significant relationship between infant nutritional status, initial age of administration, consistency of complementary feeding, amount, and frequency. Additionally, texture of complementary feeding was found to be related to nutritional status (12). Meanwhile, the results of the study by Mirania & Louis showed that there was a relationship between the age of giving complementary foods (p = 0.000) and the frequency of giving complementary foods (p = 0.002) with the nutritional status of children aged 6-24 months. In this case, parents should pay attention to their child's early nutritional needs and carry out routine health checks on their babies at the integrated health post or local health services (14). A study conducted at the Cipanas Health Center in Cipanas District, Lebak Regency, found that out of 1365 children aged 6-24 months, 11 were overweight, 1301 were good, 47 were underweight, and 6 were poor. In 2022, 1382 children were classified as overweight, 1309 as good, 52 as underweight, and 13 as poor. Sipayung Village, one of the localities with the highest prevalence of malnutrition, had 30 out of 47 children affected in 2021. Despite providing breast milk and complementary foods, infants are not provided with these foods at this stage of development. In February 2023, the majority of 93 affected individuals were over

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1 year old. The research aims to investigate the factors associated with early complementary foods and their impact on the nutritional status of infants aged 7 to 23 months.

METHODS

This study is a quantitative analytical cross-sectional research conducted from May-June 2023. The independent variable is the practice of providing complementary feeding to infants aged 7 to 23 months, while the dependent variable is their nutritional status. The research used a questionnaire with closed and open answer types, collected from infant cohort data from March 2023. The sample consisted of 105 mothers with infants aged 7 to 23 months in Sipayung Village, Cipanas District, Lebak Regency. The sampling technique was purposive, with inclusion criteria including infants aged 7-23 months, weighing at Posyandu, and willing respondents. Exclusion criteria included premature babies and those with chronic diseases. Data were processed through editing, coding, data entry, and tabulation, and analyzed using univariate frequency distribution analysis and bivariate chi square analysis.

RESULTS

Univariat Analysis Result

Table 1. Frequency Distribution of Nutritional Status of Infants Aged 7 to 23 Months, Practice of Providing Complementary Foods to Infants Aged 7 to 23 Months in Sipayung Village, Cipanas District, Lebak Regency

Nutritional Status of Infants Aged 7 to 23 Months	Frequency(f)	Persentase (%)
Good Nutrition	42	82,4
Malnutrition	9	17,6
Practice of Providing MP ASI to Babies Aged 7 to 23 Months	**Frequency (f)**	**Persentase (%)**
Appropriate	37	72,5
Not Appropriate	14	27,5
Number	51	100

Based on the results of the study in table 1, it is known that out of 51 babies aged 7 to 23 months, most of them have good nutritional status, as many as 42 babies (82.4%). Of the 51 babies aged 7 to 23 months, most of them have the practice of providing MP ASI according to as many as 37 babies (72.5%).

Table 2. Frequency Distribution of MPASI Provision Practices Based on Initial Age of Provision, Provision, Amount, and Frequency in Infants Aged 7 to 23 Months in Sipayung Village, Cipanas District, Lebak Regency

Practice of Providing Complementary Feeding Based on Age Based on Initial Age of Provision	Frequency(f)	Persentase (%)
Appropriate	47	92,2
Not Appropriate	4	7,8
Practice of Providing Complementary Feeding Based on Provision	**Frequency (f)**	**Persentase (%)**
Appropriate	45	88,2
Not Appropriate	6	11,8

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Practice of Providing Complementary Feeding Based on Quantity	Frequency (f)	Persentase (%)
Appropriate	44	86,3
Not Appropriate	7	13,7
Practice of Providing Complementary Feeding Based on Frequency	**Frequency (f)**	**Persentase (%)**
Appropriate	45	88,2
Not Appropriate	6	11,8
Quantity	**51**	**100**

Based on the results of the study in table 2, it is known that from 51 babies aged 7 to 23 months, most of them with the practice of giving MP ASI based on age based on the initial age of giving according to 42 babies (82.4%). From 51 babies aged 7 to 23 months, most of them with the practice of giving MP ASI based on the consistency of giving according to 45 babies (88.2%). From 51 babies aged 7 to 23 months, most of them with the practice of giving MP ASI based on the amount according to 44 babies (86.3%). From 51 babies aged 7 to 23 months, most of them with the practice of giving MP ASI based on the frequency of 45 babies (88.2%).

Bivariat Analysis Result

Table 3. Relationship between the Practice of Providing Complementary Foods and the Nutritional Status of Infants Aged 7 to 23 Months in Sipayung Village, Cipanas District, Lebak Regency

Practice of Providing Complementary Breast Milk	Nutritional Status of Infants Aged 7 to 23 Months				Calculate		*P value*	OR CI (95%)
	Good Nutrision		Malnutrision					
	f	%	f	%	f	%		
Appropriate	36	97,3	1	2,7	37	100	0,000	48,000 (5,052-456,028)
Not Appropriate	6	42,9	8	57,1	14	100		
Total	42	82,4	9	17,6	51	100		

Based on table 3, it shows that out of 37 infants aged 7 to 23 months with appropriate complementary feeding practices, most of them have good nutritional status, 36 respondents (97.3%), and out of 14 infants aged 7 to 23 months with inappropriate complementary feeding practices, some have poor nutritional status, 8 respondents (57.1%). The results of the Chi-Square test obtained a p value = 0.000 <0.05, which means that there is a significant relationship between complementary feeding practices and the nutritional status of infants aged 7 to 23 months in Sipayung Village, Cipanas District, Lebak Regency. The OR value is 48,000, so it can be stated that infants with appropriate complementary feeding practices have a 48,000 times greater chance of having good nutritional status compared to infants with inappropriate complementary feeding practices.

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Table 4. Relationship between the Practice of Providing Complementary Feeding Based on the Initial Age of Provision, Provision, Amount, and Frequency with the Nutritional Status of Infants Aged 7 to 23 Months in Sipayung Village, Cipanas District, Lebak Regency

Practice of Providing Complementary Breast Milk Based on Initial Age of Provision	Nutritional Status of Infants Aged 7 to 23 Months				Calculate		*P value*	OR CI (95%)
	Good Nutrision		Malnutrision					
	f	%	f	%	f	%		
Appropriate	41	87,2	6	12,8	27	100	0,015	20,500 (1,823-230,515)
Not Appropriate	1	25.0	3	75.0	4	100		
Practice of Providing Complementary Food Based on Consistency of Provision	**Nutritional Status of Infants Aged 7 to 23 Months**				**Calculate**		***P value***	**OR CI (95%)**
	Good Nutrision		**Malnutrision**					
	f	**%**	**f**	**%**	**f**	**%**		
Appropriate	40	88,9	5	11,1	45	100	0,006	16,000 (2,310-110,819)
Not Appropriate	2	33,3	4	66,7	6	100		
Practice of Providing Complementary Breast Milk Based on the Number of	**Nutritional Status of Infants Aged 7 to 23 Months**				**Calculate**		***P value***	**OR CI (95%)**
	Good Nutrision		**Malnutrision**					
	f	**%**	**f**	**%**	**f**	**%**		
Appropriate	40	90,9	4	9,1	44	100	0,000	25,000 (3,609-173,155)
Not Appropriate	2	28,6	5	71,4	7	100		
Practice of Providing Complementary Feeding Based on Frequency	**Nutritional Status of Infants Aged 7 to 23 Months**				**Calculate**		***P value***	**OR CI (95%)**
	Good Nutrision		**Malnutrision**					
	f	**%**	**f**	**%**	**f**	**%**		
Appropriate	41	91,1	4	8,9	45	100	0,000	51,250 (4,744-553,683)
Not Appropriate	1	16,7	5	83,3	6	100		
Total	42	82,4	9	17,6	51	100		

Based on table 4, it shows that out of 45 infants aged 7 to 23 months with the practice of providing complementary foods based on consistency of provision, most of them have good nutritional status, 40 respondents (88.9%), and out of 6 infants aged 7 to 23 months with the practice of providing complementary foods based on consistency of provision, some have poor nutritional status, 4 respondents (66.7%). The results of the Chi-Square test obtained a p value = 0.006 <0.05, which means that there is a significant relationship between the practice of providing complementary foods based on consistency of provision and the nutritional status of infants aged 7 to 23 months in Sipayung Village, Cipanas District, Lebak Regency. The OR value is 16,000 so that it can be stated that infants with the practice of providing complementary foods based on consistency of provision have a 16,000 times greater chance of having good nutritional status compared to infants with the practice of providing complementary foods based on

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consistency of provision. Of the 37 infants aged 7 to 23 months with the practice of providing MP ASI based on the appropriate amount, most had good nutritional status of 40 respondents (90.9%), and of the 7 infants aged 7 to 23 months with the practice of providing MP ASI based on the inappropriate amount, some had poor nutritional status of 5 respondents (71.4%). The results of the Chi-Square test obtained a p value = 0.000 <0.05, which means that there is a significant relationship between the practice of providing MP ASI based on the amount and the nutritional status of infants aged 7 to 23 months in Sipayung Village, Cipanas District, Lebak Regency. The OR value is 25,000, so it can be stated that infants with the practice of providing MP ASI based on the appropriate amount have a 25,000 times greater chance of having good nutritional status compared to infants with the practice of providing MP ASI based on the inappropriate amount. Of the 45 infants aged 7 to 23 months with the practice of providing complementary feeding based on the appropriate frequency, most had good nutritional status of 41 respondents (91.1%), and of the 6 infants aged 7 to 23 months with the practice of providing complementary feeding based on the inappropriate frequency, some had poor nutritional status of 5 respondents (83.3%). The results of the Chi-Square test obtained a p value = 0.000 <0.05, which means that there is a significant relationship between the practice of providing complementary feeding based on the frequency of nutritional status of infants aged 7 to 23 months in Sipayung Village, Cipanas District, Lebak Regency. The OR value is 51.250, so it can be stated that infants with the practice of providing complementary feeding based on the appropriate frequency have a 51.250 times greater chance of having good nutritional status compared to infants with the practice of providing complementary feeding based on the inappropriate frequency.

DISCUSSION

Frequency Distribution of Nutritional Status of Infants Aged 7 to 23 Months

Based on the results of the study, it was found that out of 51 infants aged 7 to 23 months, most of them had good nutritional status, as many as 42 infants (82.4%). Children need balanced nutrition so that their nutritional status is good, and the growth process is not hampered, because children are the age group that most often suffers from malnutrition (15). Nutritional status is determined entirely by the nutrients needed by the body and factors that determine the amount of need, absorption, and use of these substances (16). Factors that influence malnutrition consist of direct causes, indirect causes, root problems in society and national root problems. Direct causes, namely children's food and infectious diseases that children may suffer from. Indirect causes, consisting of food security in the family, child care patterns, access or affordability of children and families to clean water and health services, parental knowledge about nutrition, and provision of complementary foods (17).

The researchers found that most infants aged 7 to 23 months have good nutritional status, with their growth and weight corresponding to their age. Factors contributing to malnutrition include infectious diseases, incorrect parenting, lack of parental knowledge about good nutritional intake, and inappropriate complementary foods. To optimize growth and prevent the occurrence of infectious diseases, it is crucial to increase knowledge among mothers about providing appropriate complementary foods for their children, ensuring their nutritional status remains consistent and appropriate.

Frequency Distribution of MP ASI Provision Practices for Babies Aged 7 to 23 Months

Based on the results of the study, it was found that out of 51 babies aged 7 to 23 months, the majority of them had appropriate MP ASI provision practices, as

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many as 37 babies (72.5%). Food consumed by children aged 6-24 months is often referred to as MP-ASI (Complementary Food for Breast Milk) (18). Good complementary food for breast milk must meet the main requirements, namely being healthy, easy to digest, and containing a number of nutrients, especially energy and protein (19). Babies are ready to receive complementary foods when they show signs of chewing, reaching 2 times their birth weight, responding to feeding, resolving the tongue protrusion reflex, showing more interest in food than in bottles, sitting upright well, and increasing curiosity about other people's food (20). The practice of breastfeeding is related to the initial age of giving, consistency, amount and frequency (21).

Researchers believe that most children aged 7 to 23 months receive appropriate MP ASI, which meets the requirements for consistent, amount, and frequency of food. The mother knows when to give MP ASI, as the child starts chewing, showing interest in food, and sitting firmly, indicating that their internal body parts, particularly the digestive tract, are ready for food other than breast milk. This ensures the proper provision of food for the child's age.

Frequency Distribution of MPASI Provision Practices Based on Initial Age of Provision to Infants Aged 7 to 23 Months

Based on the results of the study, it was found that out of 51 infants aged 7 to 23 months, most of them practiced complementary feeding based on the initial age of administration, as many as 42 infants (82.4%). The age at which complementary feeding is first given to children that is right and correct is after the child is 6 months old (22). At the age of 6 months, babies begin to make movements such as chewing, moving their tongue from front to back, their oral cavity has begun to form perfectly, and babies begin to show interest in food. This is the right age to introduce complementary feeding (23). Children's age ranges from six to 24 months. Overfeeding can replace breast milk's role in meeting nutritional needs, leading to inadequate nutrition and increased allergies. Proper complementary feeding is crucial for optimal child development (24). If given early, it can result in diarrhea or constipation, this is because the child's digestive ability has not received additional food other than breast milk (2).

Mothers typically administer MP ASI to their children after 6 months old, as health workers provide information about the appropriate age. This is due to the baby's interest in food, tongue movement, and chewing. The baby's neck strength and freshness indicate readiness for food from the digestive tract, and the body's organs, particularly the digestive tract, are ready to receive it.

Frequency Distribution of MPASI Provision Practices Based on Consistency of Provision to Infants Aged 7 to 23 Months

Based on the results of the study, it was found that out of 51 infants aged 7 to 23 months, most of them practiced complementary feeding based on consistency of feeding, as many as 45 infants (88.2%). There are three forms of complementary feeding, namely pureed food, soft food or soft food and family food or solid food. When complementary feeding is first introduced, babies need to adapt to new foods because previously they only consumed breast milk (22). Therefore, the consistency of complementary feeding given to babies needs stages that are in accordance with the development of the baby's digestive organs. In the early stages, babies can be given complementary feeding with a slightly liquid consistency which is then gradually thickened (25). The thickness of the complementary feeding given will determine whether the baby's nutritional needs are met or not. Providing complementary feeding that is thick enough can provide more energy than complementary feeding porridge that is too runny (24).

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The researcher assumes that most mothers provide complementary foods according to their consistency, this indicates that mothers already know that the food given starts from pureed food, continues to soft food and is then given in the form of family food which is because the consistency of the complementary foods given requires stages that are in accordance with the development of the baby's digestive organs.

Frequency Distribution of MPASI Provision Practices Based on Number of Infants Aged 7 to 23 Months

Based on the results of the study, it was found that out of 51 infants aged 7 to 23 months, most of them practiced giving complementary foods based on the appropriate amount, as many as 44 infants (86.3%). Frequency is the frequency, in this case the frequency of giving complementary foods is how many times complementary foods are given according to the baby's age. Providing complementary foods to babies must be appropriate and according to their needs. The amount of complementary foods to babies needs to be considered considering the baby's stomach capacity which is still small (22). In determining the amount of complementary foods given, the baby's response to food can be a consideration for mothers to provide complementary foods in gradual amounts that are adjusted to the baby's age (25).

The researcher assumes that most mothers practice giving food in the appropriate amount, this is because the mother already knows about the right amount of food according to the baby's age. The knowledge that mothers get is related to the amount of MPASI given to babies through the KIA book, or information from health workers. The amount of food given starts in children aged 6 to 8 months with 2 to full tablespoons at each meal, 9-11 months around half a bowl measuring 250 ml at each meal and ages 12 to 24 months around 3/4 bowl with a size of 250 ml.

Frequency Distribution of MPASI Provision Practices Based on Frequency

Based on the results of the study, it was found that out of 51 infants aged 7 to 23 months, the majority of MP-ASI provision practices were based on frequency, as many as 45 infants (88.2%). For infants aged 6-8 months, the appropriate MP-ASI frequency is main food 2-3 times a day and snacks 1-2 times a day, for infants aged 9-23 months, the frequency of main food is 3-4 times a day with snacks 1-2 times a day (21). Providing MP-ASI to infants with inappropriate frequency is at high risk of falling into a state of advanced malnutrition and contributes to the high prevalence of malnutrition in toddlers. Because the capacity of the baby's stomach is still limited (approximately 30 grams/kg body weight) or around 200 ml, it is better to provide food with a frequency that is divided into main meals (morning, afternoon and evening) and snacks between main meals, accompanied by the provision of breast milk or formula milk 2 to 3 times a day (27).

Researchers assume that most babies aged 7 to 23 months were found with appropriate MP-ASI frequency, this indicates that most mothers already know that main foods are given around 2 to 3 times a day while snacks are around 1 to 2 times a day. The reason that the mother put forward was due to the process of emptying food in the baby's digestive tract for around 2 to 3 hours. The division of food is divided into main foods and snacks, they put forward the reason because if children are only given main foods, they will feel bored, to prevent this boredom, snacks are given in portions according to the baby's age.

The Relationship between the Practice of Providing Complementary Food and the Nutritional Status of Infants Aged 7 to 23 Months

Based on the results of the Chi-Square test, the p value = 0.000 <0.05 was obtained, which means that there is a significant relationship between the practice of providing complementary foods and the nutritional status of infants aged 7 to 23 months. The OR value is 48,000, so it can be stated that infants with appropriate

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complementary foods practices have a 48,000 times greater chance of having good nutritional status compared to infants with inappropriate complementary foods practices.

Research suggests a correlation between providing complementary foods to infants aged 7 to 23 months and their nutritional status. This is due to the timing of the provision, consistency, and frequency of the foods. The consistency of the foods, starting from mashed foods to family foods, and the frequency of the foods are crucial for optimal digestive processes and nutrient absorption, ultimately impacting the baby's nutritional status to be good or normal.

The Relationship between the Practice of Providing Complementary Feeding Based on the Initial Age of Provision with the Nutritional Status of Infants Aged 7 to 23 Months

Based on the results of the Chi-Square test, the p value = 0.015 <0.05 was obtained, which means that there is a significant relationship between the practice of providing complementary foods based on the initial age of administration with the nutritional status of infants aged 7 to 23 months. The OR value is 20,500, so it can be stated that infants with the practice of providing complementary foods based on the initial age of administration are 20,500 times more likely to have good nutritional status than infants with the practice of providing complementary foods based on the initial age of administration that are not appropriate. (25) The right age to receive complementary foods is between 6-23 months, where at that age the child has reached the general development stage (chewing, swallowing, digestion and secretion) which allows the child to be given food other than breast milk (28). Researchers believe that the initial age of MP-ASI administration affects the nutritional status of infants aged 7 to 23 months. This is because the child's digestive tract is ready for external food, allowing for easier absorption of nutrients. If MP-ASI is given early, the baby's digestive tract is not ready, leading to growth disorders and affecting their nutritional status. However, if MP-ASI is given early, the baby's susceptibility to infectious diseases increases, potentially causing growth disorders and negatively impacting their nutritional status. MP-ASI is given because the child's need for nutrition for growth can no longer be met only by giving breast milk, but if given early it can result in diarrhea or constipation, this is because the child's digestive ability has not received additional food other than breast milk (29).

The Relationship between the Practice of Providing Complementary Food Based on Consistency of Provision and the Nutritional Status of Infants Aged 7 to 23 Months

Based on the study, it shows that the results of the Chi-Square test obtained a p value = 0.006 <0.05, which means that there is a significant relationship between the practice of providing complementary foods based on the consistency of provision with the nutritional status of infants aged 7 to 23 months in Sipayung Village, Cipanas District, Lebak Regency. The OR value is 16,000 so that it can be stated that infants with the practice of providing complementary foods based on the consistency of provision have a 16,000 times greater chance of having good nutritional status compared to infants with the practice of providing complementary foods based on the consistency of provision that is not appropriate. The introduction of complementary foods according to the stages of the baby's age aims to teach chewing skills, especially in the critical phase, namely at the age of 6-9 months (21).

Researchers believe that providing complementary foods based on consistency with infants aged 7 to 23 months is related to their nutritional status. This is because if the mother provides foods adapted to the baby's age, the absorption process and stomach muscle development will run smoothly. The food grinding process in the body starts from runny or pureed food at 6

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to 8 months, soft food at 9 to 11 months, and adult food at 12-23 months to prevent digestive organ abnormalities. The texture of solid or hard complementary foods can trigger kidney and digestion work too hard, as children need to learn to suck, chew, swallow, and recognize different types of food (26).

The Relationship between the Practice of Providing Complementary Feeding Based on the Number of Infants with the Nutritional Status of Infants Aged 7 to 23 Months

Based on the study, it shows that the p value = 0.000 <0.05, which means that there is a significant relationship between the practice of providing complementary foods based on the amount and the nutritional status of infants aged 7 to 23 months. Infants who provide complementary foods appropriately have a 25,000 times higher chance of good nutritional status compared to those who provide inappropriate amounts. This is due to the vulnerable period of providing complementary foods (MP-ASI), where the nutritional quality is inadequate and the MP-ASI is too small. The portion of food needed depends on the adequacy of energy contained in the food (25). The energy content of MP-ASI ranges from 0.6 to 1.0 kcal per gram. If the MP-ASI given has sufficient energy, then a small amount of MP-ASI can cover the energy gap, but if MP-ASI is dissolved in water, then a larger volume of MP-ASI is needed to meet the energy needs of infants (29).

Researchers suggest a correlation between the amount of MP-ASI provided to infants aged 7 to 23 months and their nutritional status. Proper food provision ensures adequate nutrition quality, while too small MP-ASI results in inadequate nutrition. The amount of food should be adjusted based on the baby's skills and readiness to receive food.

The Relationship between the Practice of Providing Complementary Food Based on Frequency and the Nutritional Status of Infants Aged 7 to 23 Months

Based on the study, it shows that the p value = 0.000 <0.05, which means that there is a significant relationship between the practice of providing complementary foods based on frequency with the nutritional status of infants aged 7 to 23 months. The OR value is 51.250, indicating that infants with appropriate complementary foods have a 51.250 times higher chance of good nutritional status compared to those with inappropriate frequency. If complementary foods have energy sufficiency, a small amount can cover the gap, while dissolved foods require a larger volume to meet infants' energy needs (30). For infants aged 6-8 months, the appropriate frequency of MP-ASI is main food 2-3 times a day and snacks 1-2 times a day, for infants aged 9-23 months the frequency of main food is 3-4 times a day with snacks 1-2 times a day (21). Providing MP-ASI to infants with an inappropriate frequency is at high risk of falling into a state of advanced malnutrition and contributes to the high prevalence of malnutrition in toddlers. Because the capacity of the baby's stomach is still limited (approximately 30 grams/kg body weight) or around 200 ml, it is better to provide food with a frequency that is divided into main meals (morning, afternoon and evening) and snacks between main meals, accompanied by giving breast milk or formula milk 2 to 3 times a day (27).

Researchers assume that there is a relationship between the practice of giving complementary foods based on frequency and the nutritional status of babies aged 7 to 23 months, this is because with the frequency of giving main foods around 2 to 3 times a day and snacks around 1 to 2 times a day, babies will not get bored when eating them. Moreover, the process of emptying food in the baby's digestive tract is around 2 to 3, so with a frequency of giving 2 to 3 times a day in main foods and 1 to 2 times a day in snacks, the baby's digestive tract will continue to work which makes the process of absorbing food essence into the body will also run continuously which has an impact on increasing the baby's growth so that the

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baby's nutritional status also increases. If the frequency of giving is not in accordance with the established health requirements, it can result in malnutrition and other consequences of overnutrition.

CONCLUSIONS

The study reveals a significant relationship between the frequency of providing complementary foods and the nutritional status of infants aged 7 to 23 months in Sipayung Village, Cipanas District, Lebak Regency. Infants with appropriate frequency of complementary foods have a 51.250 times greater chance of good nutritional status compared to those with inappropriate frequency. The study suggests that a small amount of complementary foods can cover energy gaps, while a larger volume is needed for dissolved foods (30). Infants aged 6-8 months should consume main food 2-3 times daily and snacks 1-2 times daily, while those aged 9-23 months should consume main food 3-4 times daily with snacks 1-2 times daily (23). Infants with inappropriate MP-ASI frequency are at high risk of advanced malnutrition and toddler malnutrition. To prevent this, it's recommended to provide food in a regular frequency, divided into main meals and snacks, and supplemented with breast milk or formula milk 2 to 3 times a day (27). In accordance with the results of the study by Hasanah there is a significant relationship between the nutritional status of infants and the frequency of giving MP-ASI (p = 0.011) (11). Hardiningsih there is a relationship between the frequency of giving complementary foods (p = 0.04) and body weight (26). Mirania & Louis showed that there is a relationship between the frequency of giving complementary foods (p = 0.002) and the nutritional status of children aged 6-24 months (14). There is a significant relationship between the practice of giving complementary foods, the initial age of giving complementary foods, the consistency of giving complementary foods, the amount of complementary foods and the frequency of complementary foods with the nutritional status of infants aged 7 to 23 months in Sipayung Village, Cipanas District, Lebak Regency.

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